



# CLEARING THE AIR

## An APCD Workshop Series

- July 16**    **APCD 101/Louisville's Air Quality**
- July 30**    **Air Quality & Health/Reducing My Pollution Impact**
- Aug. 13**    **Odors: Reporting and Responding**
- Aug. 27**    **The APCD Regulatory Process**
- Sept. 10**    **How We Monitor Air Quality**
- Sept. 22**    **Understanding Risk: A Technical Workshop\***  
                  **(How to use EJ Screen, TRI, and other EPA data tools)**
- Sept. 24**    **The STAR Program/Environmental Justice**

**QUESTIONS?**  
Call us at  
**(502) 574-6000**

Workshops held at the Louisville Free Public Library, 301 York St.  
Each session is 5:30-7 p.m.

*(\*Technical Workshop 10 a.m.-2 p.m. Registration Required. Send email to [ClearingTheAir@louisvilleky.gov](mailto:ClearingTheAir@louisvilleky.gov))*

**[www.louisvilleky.gov/APCD](http://www.louisvilleky.gov/APCD)**



# CLEARING THE AIR

## An APCD Workshop Series

### The APCD Workshop Series seeks to:

- Increase the community's understanding of Louisville's air quality and of APCD's many functions
- Provide information that will **empower** citizens
- Provide a more informal forum for Q&A with APCD and opportunity for feedback
- Improve related public outcomes



# CLEARING THE AIR

## An APCD Workshop Series

### Today's workshop seeks to:

1. Help the community better understand the STAR Program and its connection to Environmental Justice.
2. Explain Environmental Justice from a national and local (Louisville) level.
3. Discuss how collaborative efforts between the community and the APCD continues to help improve air quality.
4. Provide information about APCD's plans to continue addressing air toxics in Louisville.



# CLEARING THE AIR

## An APCD Workshop Series

- There are no silly questions

- Public Participation =



- Interactive

- Ask questions throughout the workshop as they come to mind
- Use the Post-it notes to write down questions and place them around the room



# The STAR Program & Environmental Justice

Air Pollution Control District  
September 24, 2018



# Roadmap

- **Environmental Justice**
- Rubbertown and the STAR Program
- Implementing STAR
- Continued Efforts



# Environmental Justice (EJ)

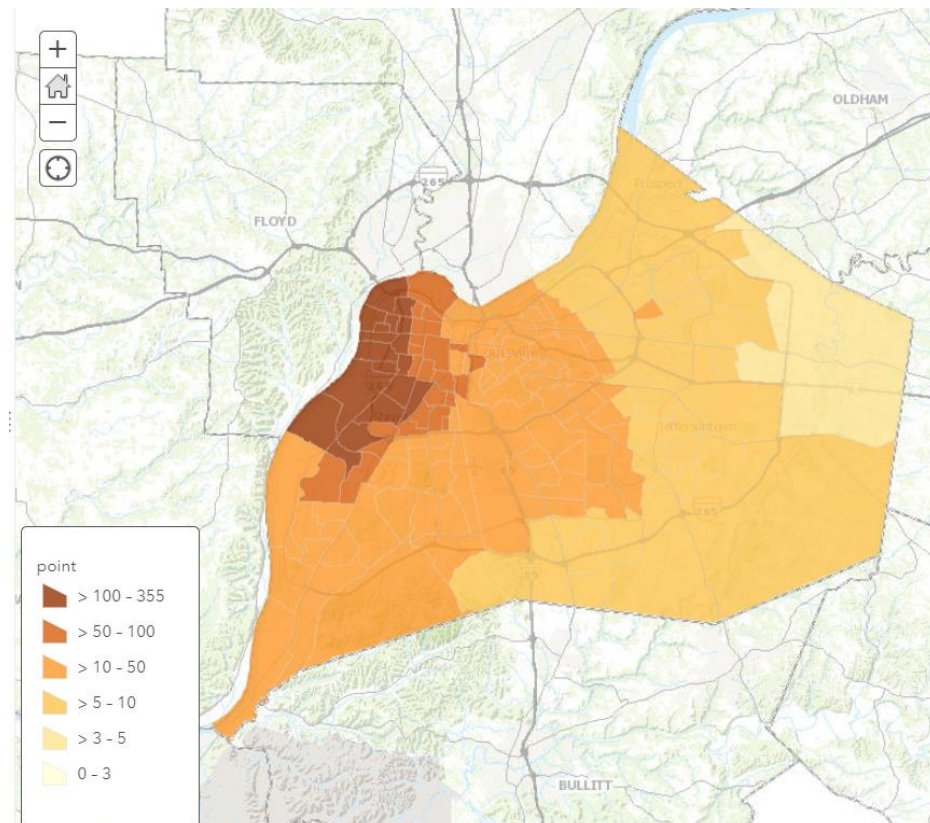
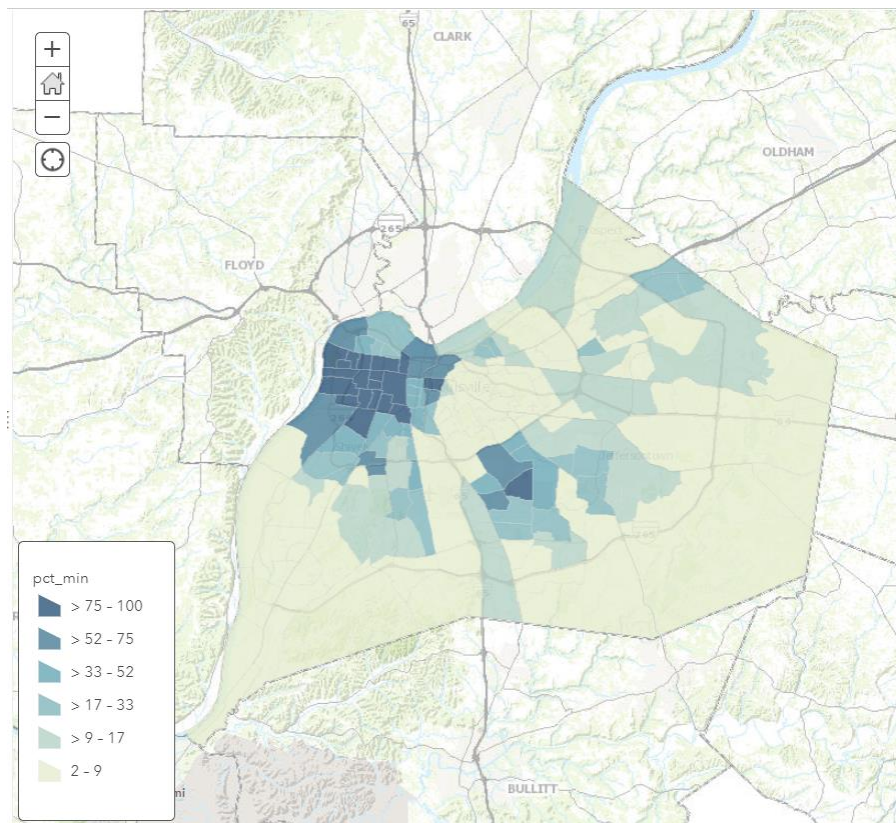
- The **fair treatment and meaningful involvement of all people** regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
- It's achieved when **everyone** enjoys the same degree of protection from environmental and health hazards **and** equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

- [U.S. Environmental Protection Agency](#)



# EJ in Louisville

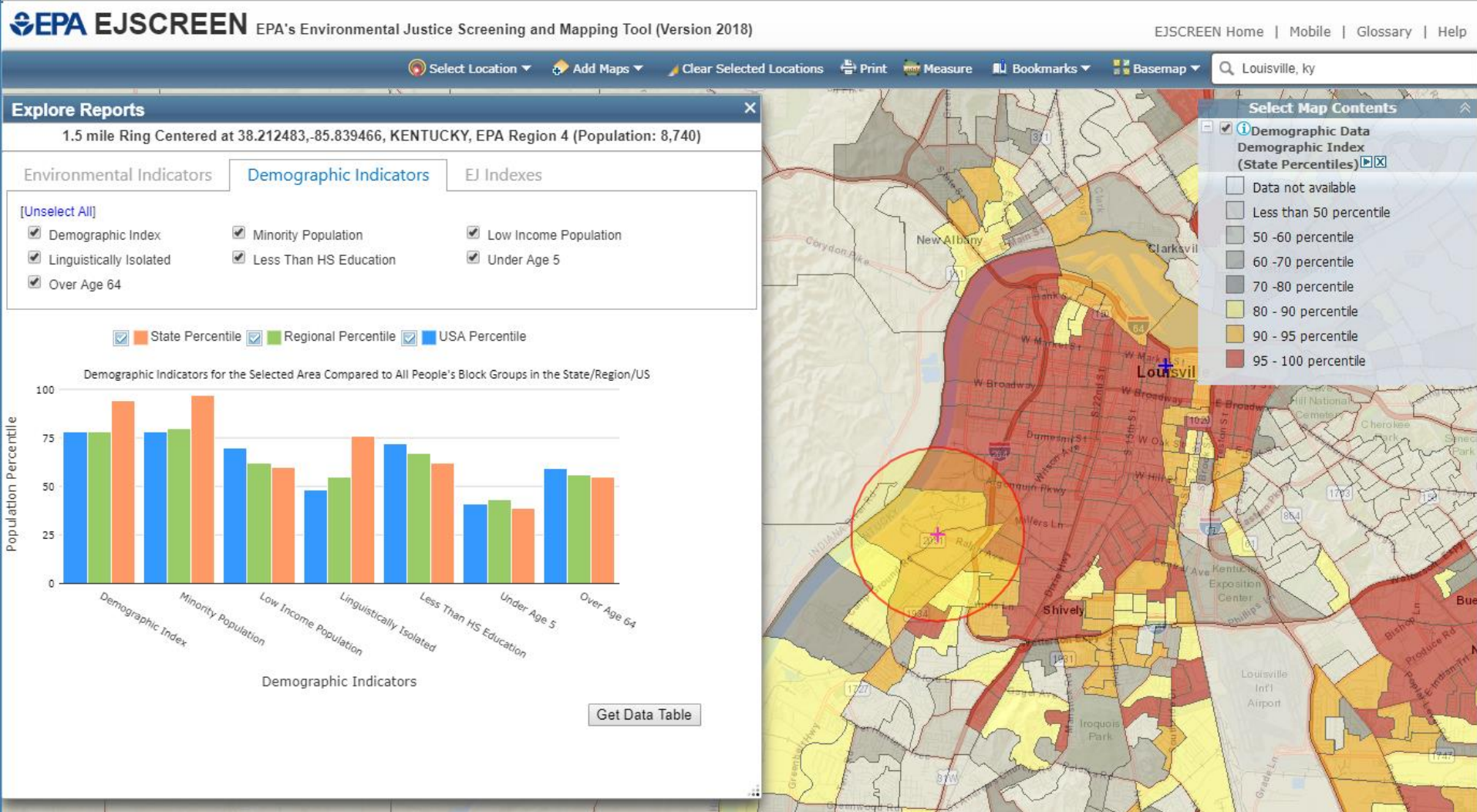
2000 Census Percent Minority v 2005 NATA Risk (in a million),  
Point Sources



Data sourced from [EPA EJSCREEN](#) and the [National Air Toxics Assessment \(NATA\)](#) data tools.



# Rubbertown



# Roadmap

- Environmental Justice
- **Rubbertown and the STAR Program**
- Implementing STAR
- Continued Efforts



# Rubbertown

- Industrial area located in West Louisville, KY
- **1918** – Formation of the Standard Oil Refinery; the facility set the stage for future industry in the area
- **World War II (1939-1945)** – West Louisville industrial area starts producing synthetic rubber for tires and other key components used during the war; area now called “Rubbertown”





# Rubbertown

- **1950's** – Residents voice concerns about air pollution in Rubbertown
- **1965** – Explosion at DuPont facility kills 12 workers; more becomes known about the health risks from toxic industrial chemicals (*E.g.* benzene, 1, 3-butadiene); residents push for more controls on Rubbertown facilities
- **1974** – Link established between angiosarcoma and B.F. Goodrich employees exposed to polyvinyl chloride polymerization
- **1996** – Formation of the West Jefferson County Community Task Force (WJCCTF)
- **Early 2000's** – Health assessments conducted in Rubbertown neighborhoods; assessments found a greater risk of cancer and other illnesses to Rubbertown residents compared to other areas in Louisville



# West Jefferson Community Task Force (WJCCTF)

Established by the Jefferson County Division of Environmental Health and Protection. Initial members of the WJCCTF included:

- Citizens from 12 West Jefferson County neighborhoods
- 4 industries from Rubbertown
- The University of Louisville
- Metropolitan Sewer District
- Air Pollution Control District
- The Health Department
- EPA Region 4

# WJCCTF Mission

- Identify environmental concerns and environmental health concerns of the residents of West Louisville and western Jefferson County, Kentucky
- Prioritize and communicate these concerns
- Develop recommendations and strategies to address them; and to ensure the implementation of these so that all parties contribute appropriately as good neighbors to the well-being of the community.



# West Louisville Air Toxics Study (WLATS)

- 1-year monitoring study (April 2000 to April 2001)
- **Study conducted and selected by the West Jefferson County community** to interpret the data collected
- Monitored for
  - 83 Volatile organic Compounds (VOCs)
  - 63 Semi-VOCs
  - Formaldehyde, HCl, HF
  - 20 metals
- Results found:
  - 17 carcinogens with risk greater than one in a million ( $1 \times 10^{-6}$ )



# EPA Relative Risk Screening Assessment

- Conducted by the U.S. EPA Region 4
- Released the toxics characterization report during the WLATS study
- Assessment evaluated 736 counties in 8 southeast (KY, TN, GA, NC, SC, FL, AL, MS) states
- Jefferson County was the number one county in risk of exposure to toxic air pollutants in the 8 southeast states



# STAR Program Timeline

**1996 - 2000**

WJCCTF formed;  
WJCCTF begins  
hosting Monthly  
Meetings

**Sept.  
2004**

First  
Draft  
STAR  
Program

**July  
2005**

Adopted  
STAR  
Program

**2000 -  
2003**

West  
Louisville  
Air Toxics  
Study

**Jan.  
2005**

Proposed  
STAR  
Program

**2005 -  
Present**

Implementation

# Criteria Pollutants

- The six common air pollutants (also known as “criteria pollutants”) identified by U.S. EPA in the Clean Air Act (CAA), 40 CFR part 50
- CAA sets National Ambient Air Quality Standards (NAAQS) to monitor levels for each of the six criteria pollutants
- NAAQS = **health-based standards** periodically reviewed and strengthened over time by an independent body of reviewers from the scientific community

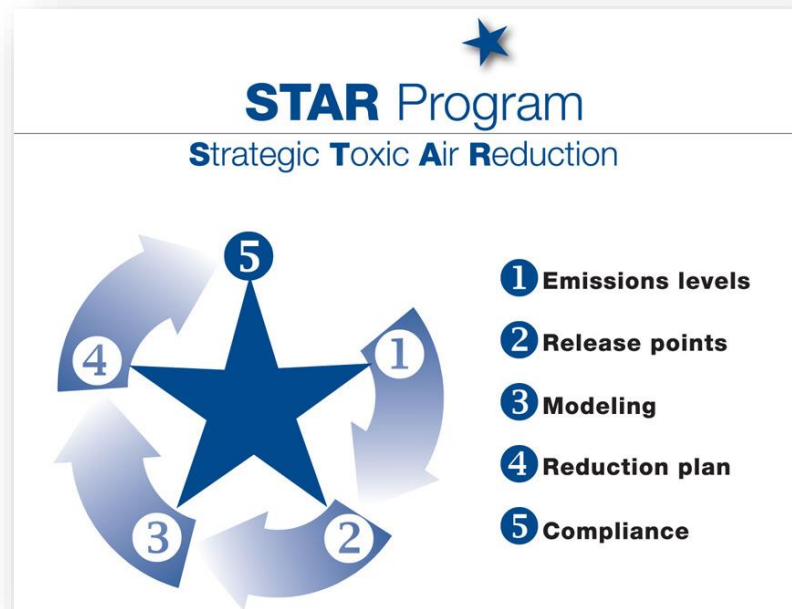
Carbon Monoxide  
Lead  
Sulfur Dioxide  
Nitrogen Dioxide  
Particulate Matter  
Ozone

# Air Toxics

- Under the Clean Air Act
  - Phase 1: “Technology-based” approach; EPA develops MACT (Maximum Achievable Control Technology) standards
  - Phase 2: “Risk-based” approach; EPA determines if more health-protective standards are needed

# STAR Program Development

A regulatory program to reduce harmful contaminants in the air we breathe, to better protect the health of our citizens, and enhance the quality of life.





# Community Involvement

## BEFORE the adoption of STAR

- Multiple community meetings and public forums (**over 50**) held to discuss the STAR Program & the draft regulations
  - Monthly presentations by EPA, local industries, local agencies, community groups and citizens/Rubbertown residents
- Built consensus on key issues
  - *E.g.* location of monitoring sites, target level risks, pollutants of concern
- Opportunities for public comment



# Community Involvement

## AFTER the adoption of STAR...

- Stakeholder Groups
  - STAR Implementation Advisory Group (2005 – 2007)
    - Reviewed “nuts and bolts” of the newly implemented STAR Program
  - [STAR Regulation 5.30 Stakeholder Group](#) (2005 – 2007)
    - Developed, reviewed and commented on, the “Report” assessing the risk to human health and welfare and the “Plan of Action” to reduce risk from “smaller sources” emitting toxic emissions throughout the community
  - STAR Advisory Group



# Roadmap

- Environmental Justice
- Rubbertown and the STAR Program
- **Implementing STAR**
- Continued Efforts



# STAR Program Highlights

## The STAR Program

1. Provides a framework for determining the environmental acceptability of toxics
2. Requires APCD to assess and address other toxic emissions
3. Requires companies to assess and address



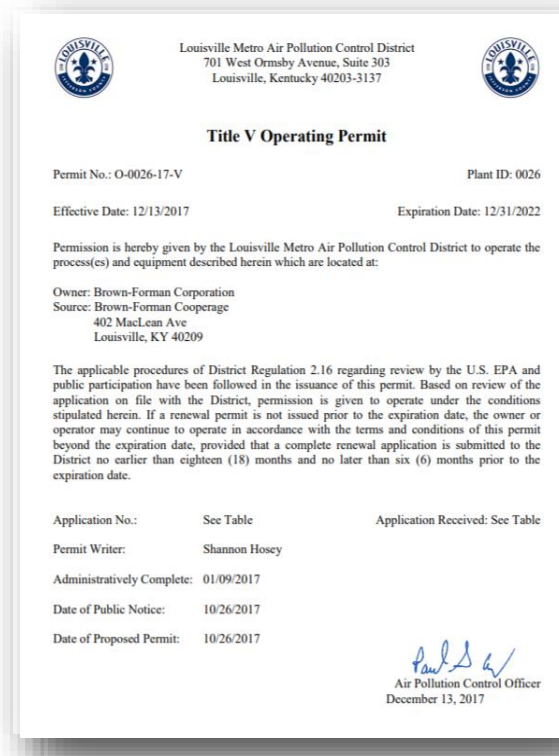
# What toxic chemicals are regulated under STAR?

## Toxic Air Contaminants (TACs)

- Category 1 – 18 identified from the West Louisville Air Toxics Study (WLATS)
- Category 2 – 19 identified Risk Screening Environmental Indicators (EPA-4 ATRRSA)
- Category 3 – Urban Air Toxics not included under Category 1 or 2
- Category 4 – Remaining Hazardous Air Pollutants (HAPs)

# What sources are regulated?

- All Title V
- Larger FEDOOPs
- General Duty allows for review of any source



The image shows a 'Title V Operating Permit' issued by the Louisville Metro Air Pollution Control District. The permit is for Plant ID: 0026, with Permit No.: O-0026-17-V. It is effective from 12/13/2017 to 12/31/2022. The permit is issued to Brown-Forman Corporation, located at 402 MacLean Ave, Louisville, KY 40209. The permit allows the owner to operate the process(es) and equipment described herein which are located at: 402 MacLean Ave, Louisville, KY 40209. The permit is issued under the applicable procedures of District Regulation 2.16 regarding review by the U.S. EPA and public participation have been followed in the issuance of this permit. Based on review of the application on file with the District, permission is given to operate under the conditions stipulated herein. If a renewal permit is not issued prior to the expiration date, the owner or operator may continue to operate in accordance with the terms and conditions of this permit beyond the expiration date, provided that a complete renewal application is submitted to the District no earlier than eighteen (18) months and no later than six (6) months prior to the expiration date. The permit is issued by Shannon Hosey, Permit Writer, on 01/09/2017. The date of public notice is 10/26/2017, and the date of proposed permit is 10/26/2017. The permit is signed by Paul D. W. Air Pollution Control Officer, December 13, 2017.

Louisville Metro Air Pollution Control District  
701 West Ormsby Avenue, Suite 303  
Louisville, Kentucky 40203-3137

**Title V Operating Permit**

Permit No.: O-0026-17-V Plant ID: 0026

Effective Date: 12/13/2017 Expiration Date: 12/31/2022

Permission is hereby given by the Louisville Metro Air Pollution Control District to operate the process(es) and equipment described herein which are located at:

Owner: Brown-Forman Corporation  
Source: Brown-Forman Cooperage  
402 MacLean Ave  
Louisville, KY 40209

The applicable procedures of District Regulation 2.16 regarding review by the U.S. EPA and public participation have been followed in the issuance of this permit. Based on review of the application on file with the District, permission is given to operate under the conditions stipulated herein. If a renewal permit is not issued prior to the expiration date, the owner or operator may continue to operate in accordance with the terms and conditions of this permit beyond the expiration date, provided that a complete renewal application is submitted to the District no earlier than eighteen (18) months and no later than six (6) months prior to the expiration date.

Application No.: See Table Application Received: See Table

Permit Writer: Shannon Hosey

Administratively Complete: 01/09/2017

Date of Public Notice: 10/26/2017

Date of Proposed Permit: 10/26/2017

*Paul D. W.*  
Air Pollution Control Officer  
December 13, 2017



# What's the science?

- APCD relies upon toxicologists and other researchers to establish risk levels of each chemical
  - Benchmark Ambient Concentration (BAC)
  - Updated periodically as research progresses
- Terminology is a little misleading
  - It is to rank concerns and direct focus
  - Not to specifically plan for medical treatment
- EPA approved dispersion models are used to estimate maximum concentrations

# Environmental Acceptability Demonstration

- Identify process/equipment
- Identify TACs
- Emission rate is documented (lbs.)
  - Start with Potential to Emit (PTE)
  - Many companies evaluated less than PTE
- Compile release parameters
  - Height of release
  - Temperature and velocity of release
  - Must account for fugitive emissions

# STAR Permitting Process

- Dispersion modelling
  - Convert amount to concentration
  - Simple methods is more conservative
  - More complex give more accurate results
- Maximum concentrations and location of impact are identified
- Compared to BAC – "magic number"
  - Ratio is Cancer Risk or Hazard Quotient
- Set compliant emission rate as limit in permit
- Develop compliance demonstration methods

# Compliance

- The permit is just the start
- Companies must test, monitor, and report based on their permit
- On-site inspections are conducted
- Annual Emission Inventories are reviewed
- APCD has conducted periodic re-evaluations of STAR demonstrations and compared to current operations

# Public Participation

- All demonstrations and permits are available through the Open Records Process
- Operating permits have a 30-day public comment period
- Title V construction permit have a 30-day public comment period
- [Subscribe to APCD's electronic mailing list](#) to receive information or refer to the [District's Proposed Actions Page](#)



# Roadmap

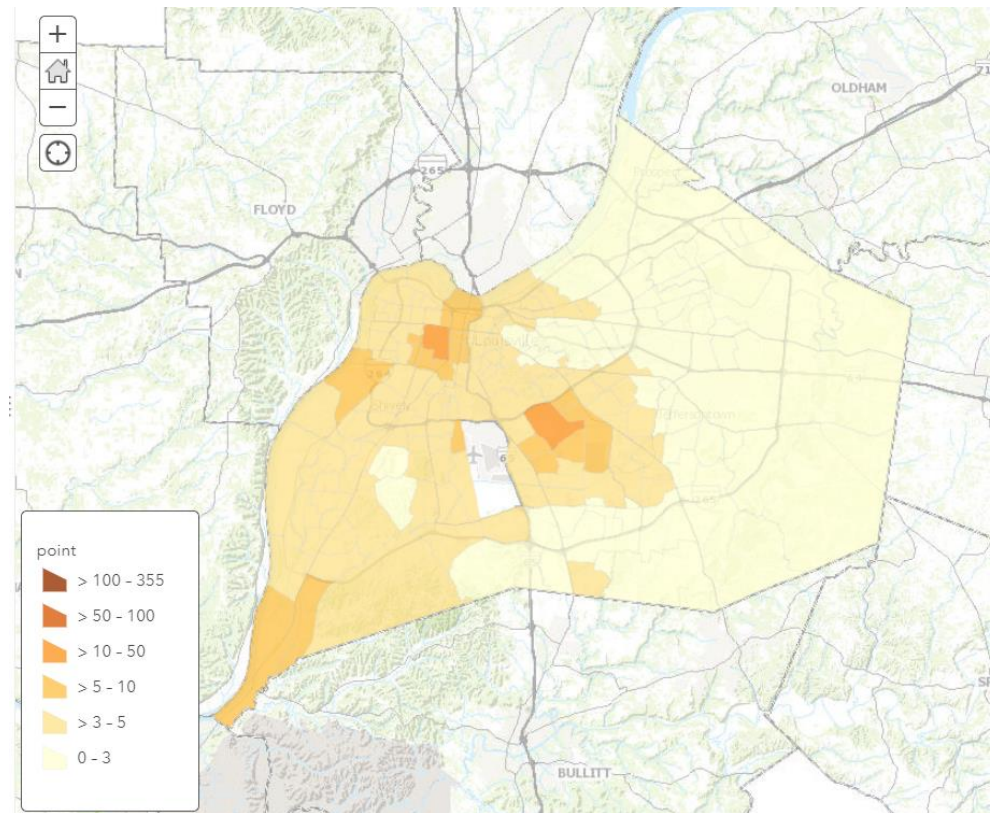
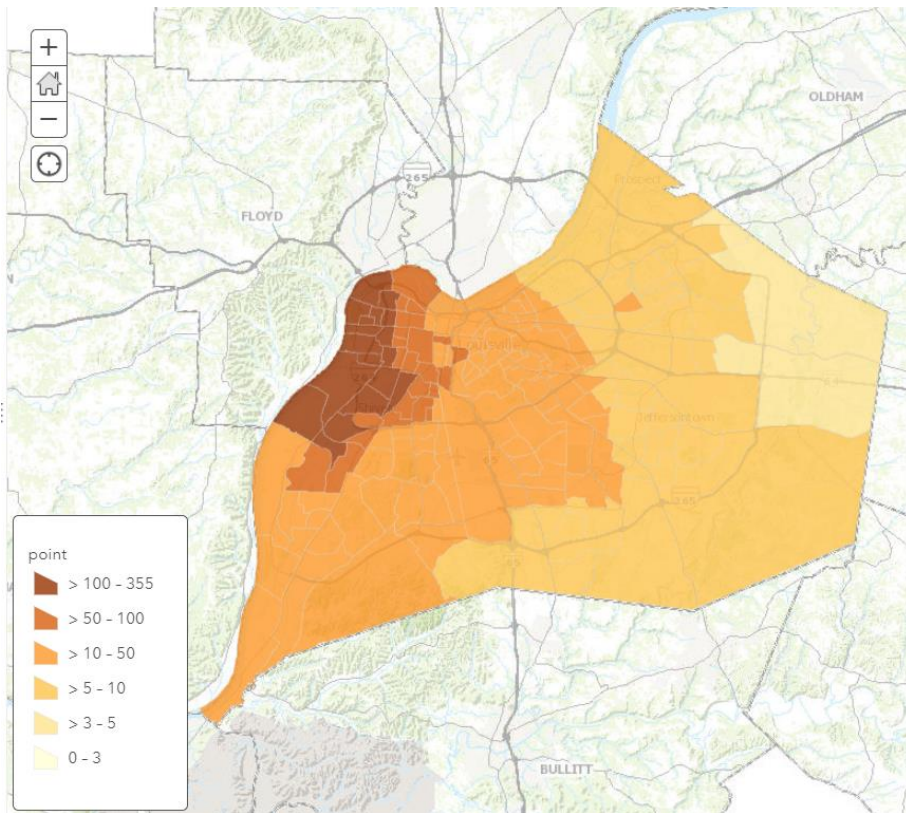
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- Implementing STAR
- **Continued Efforts**



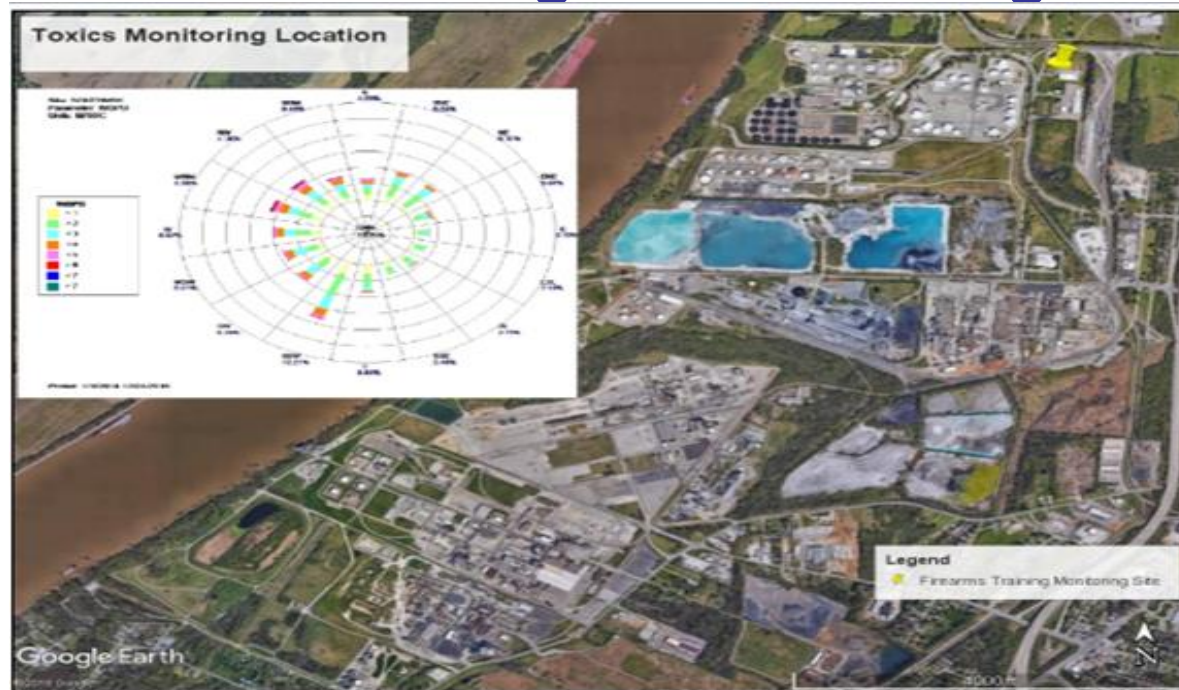


# Progress to Date

## 2005 v 2014 National Air Toxics Assessment – Point Sources



# Continued Efforts: Air Toxics Monitoring Firearms Training Air Monitoring Site



Stay up-to-date on APCD's Air Toxics Monitoring Project at [louisvilleky.gov/government/air-pollution-control-district/epa-air-toxics-monitoring-project-louisville](https://louisvilleky.gov/government/air-pollution-control-district/epa-air-toxics-monitoring-project-louisville)

# Continued Efforts: Air Toxics Monitoring

Expanded air monitoring network;  
added new equipment in Rubbertown  
to monitor air toxics of concern and  
select volatile organic compounds with  
high photochemical reactivity

- **Monitoring objectives include:**

- Generating near real time, quality-assured data
- Providing air pollution data to the community in a timely way
- Supporting academic and scientific research
- Improving access to data via APCD's website and U.S. EPA's Air Quality System (AQS) database

<u>CAS No.</u>	<u>Compound</u>	<u>TAC No.</u>	<u>CAS No.</u>	<u>Compound</u>	<u>TAC No.</u>
107-13-1	Acrylonitrile	1	127-18-4	Perchloroethylene (Tetrachloroethylene)	1
71-43-2	Benzene	1	79-01-6	Trichloroethylene	1
75-25-2	Bromoform	1	75-01-4	Vinyl Chloride	1
106-99-0	1,3 Butadiene	1	108-88-3	Toluene	1
56-23-5	Carbon tetrachloride	1	100-41-4	Ethylbenzene	2
67-66-3	Chloroform	1	108-10-1	Methyl isobutyl ketone (4-Methyl-2-pentanone)	4
106-46-7	1,4 Dichlorobenzene	1	100-42-5	Styrene	4
75-09-2	Methylene chloride (Dichloromethane)	1	80-62-6	Methyl methacrylate	4
			140-88-5	Ethyl acrylate	4



# Continued Efforts: Air Toxics Monitoring

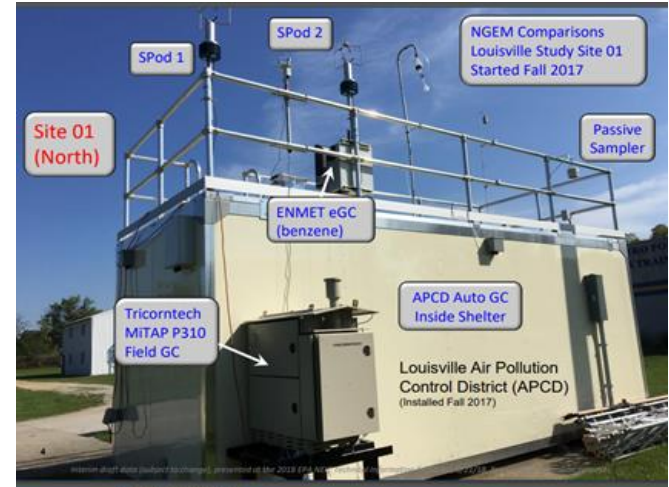
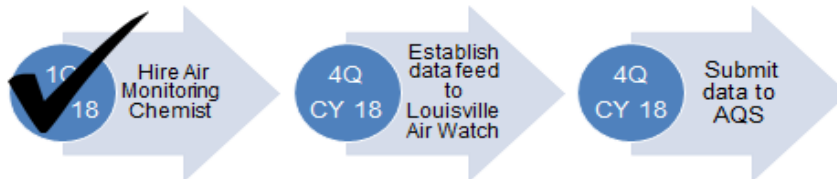
## Firearms Training

Air Monitoring Site Upgrades:  
Milestones Met on Original Timeline  
April 2017



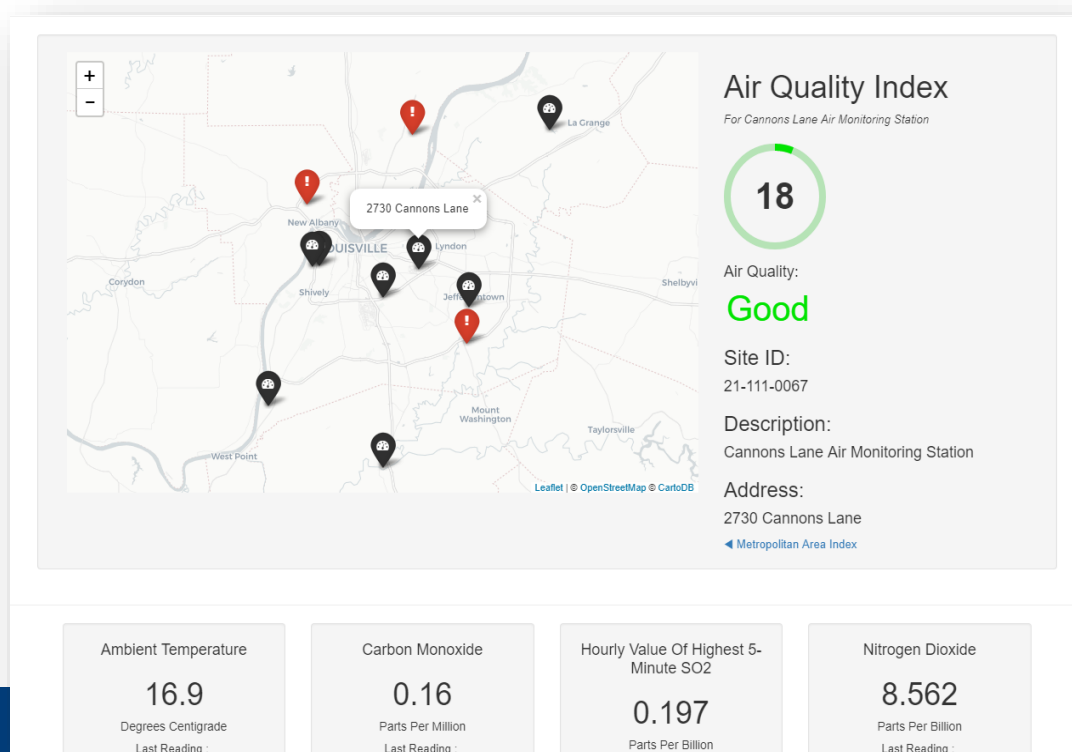
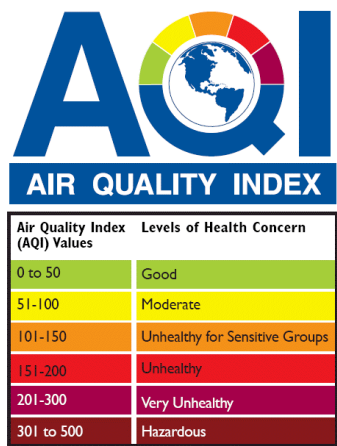
## Firearms Training

Air Monitoring Site Upgrades:  
Milestones Met on Revised Timeline  
August 2018



# Louisville Air Watch “2.0”

- Improved access to current air monitoring network data, including air toxics
- Improved user interface
- Look-up function for data from previous days



# Continuing the Conversation

- To support opportunities for **meaningful involvement by all people**, APCD will continue to offer **transparent and frequent** opportunities for our community to learn about our work – the tools that we use and the processes through which those are applied.
- We will continue to highlight the **public participation opportunities** built into those processes, from reg development to implementation to enforcement.



# Clearing the Air Workshop Series

- 2019 series to be announced!
  - Help us find new topics of interest and decide which should be repeated: [ClearingTheAir@louisvilleky.gov](mailto:ClearingTheAir@louisvilleky.gov)
  - When and where?
- Additional group-specific presentations scheduled
  - More opportunities?





# Community Presence

- Continued engagement with community partners

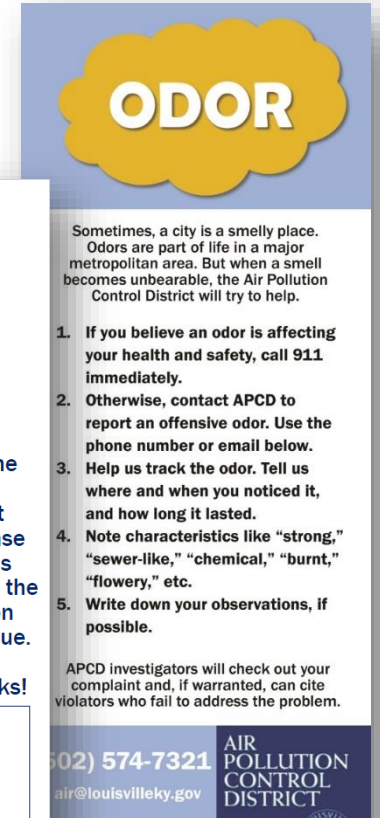
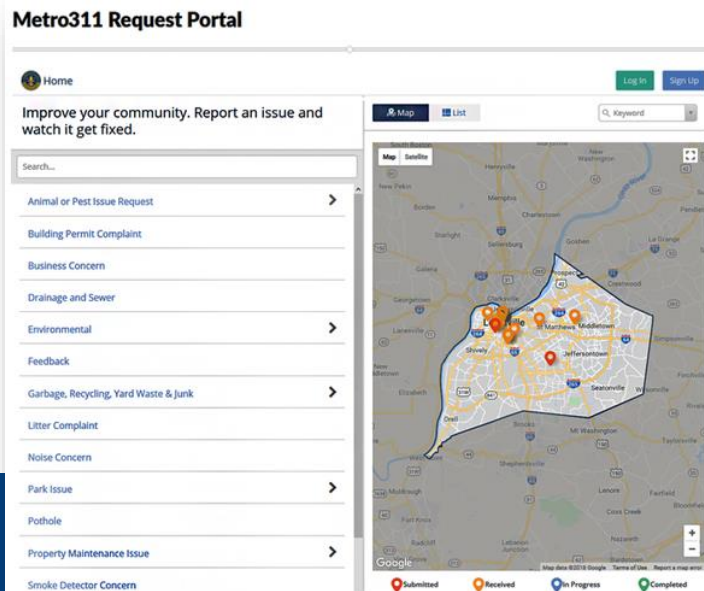


Superfund  
Research  
Center

- Sponsorship/support of partner events, including **WJCCTF Environmental Justice Conference**
- Increased agency presence at community events



- Finding additional ways to communicate:
  - Door hanger for Compliance Officers
  - Odor reporting flyers
  - Odor tracking log
  - New Metro311 system!

[illegible]

# Resources

## **Air Pollution Control District**

[Louisvilleky.gov/APCD](http://Louisvilleky.gov/APCD)

[Open Records Request](#)

[STAR Program](#)

[APCD Clearing the Air Community](#)

[Workshop Series](#)

## **Environmental Protection Agency**

[EJSCREEN](#)

[National Air Toxics Assessment \(NATA\)](#)

[Environmental Justice](#)

## **Local Community Groups**

[West Jefferson County Community Task Force \(WJCCTF\)](#)

[Rubbertown Emergency ACTION \(REACT\)](#)

[Rubbertown Community Advisory](#)

[Council \(RCAC\)](#)

# Questions?

## Louisville Metro Air Pollution Control District

701 W. Ormsby Ave.

Ste. 303

Louisville, Ky. 40203

(502) 574-6000

[www.louisvilleky.gov/APCD](http://www.louisvilleky.gov/APCD)

Keith H. Talley Sr., Director